What is claimed is:

1. A record medium for recording a program that causes an information apparatus to accomplish a multi-dimensional Fourier parallel processing method for a shared memory type scalar parallel computer having a plurality of processors, the method comprising:

(a) dividing multi-dimensional data to be Fourier transformed into a plurality of two-dimensional data elements corresponding to the number of the processors and storing the divided two-dimensional data elements to secondary cache memories of the processors;

(b) causing each of the processors to two-dimensionally Fourier transform the two-dimensional data elements stored in the relevant secondary cache memory; and

(c) repeating the step (b) a required number of times and when necessary, assigning the remaining one-dimensional data elements to each of the processors and causing each of the processors to one-dimensionally Fourier transform the one-dimensional data elements.

2. The record medium as set forth in claim 1, wherein the step (b) is performed by causing each of the processors to bind a plurality of vectors of the second cache memory in a particular dimensional direction, copy the bound vectors to a relevant primary cache memory, and successively two-dimensionally Fourier transform the bound vectors.

3. The record medium as set forth in claim 1, wherein the multi-dimensional Fourier transform is a three-dimensional Fourier transform.

4. A multi-dimensional Fourier parallel processing method for a shared memory type scalar parallel computer having a plurality of processors, the method comprising:

(a) dividing multi-dimensional data to be Fourier transformed into a plurality of two-dimensional data elements corresponding to the number of the processors and storing the divided two-dimensional data elements to secondary cache memories of the processors;

(b) causing each of the processors to two-dimensionally Fourier transform the two-dimensional

data elements stored in the relevant secondary cache memory; and

(c) repeating the step (b) a required number of times and when necessary assigning the remaining one-dimensional data elements to each of the processors and causing each of the processors to one-dimensionally Fourier transform the one-dimensional data elements.

5. A multi-dimensional Fourier parallel processing apparatus for a shared memory type scalar parallel computer having a plurality of processors, the apparatus comprising:

a dividing unit dividing multi-dimensional data to be Fourier transformed into a plurality of two-dimensional data elements corresponding to the number of the processors and storing the divided two-dimensional data elements to secondary cache memories of the processors;

a two-dimensional Fourier transform unit causing each of the processors to two-dimensionally Fourier transform the two-dimensional data elements stored in the relevant secondary cache memory; and

a one-dimensional Fourier transform unit repeating the two-dimensional Fourier transform a

required number of times and when necessary assigning the remaining one-dimensional data elements to each of the processors and causing each of the processors to one-dimensionally Fourier transform the one-dimensional data elements.